

REMARKS

Claims 1-14 are pending in the application. By the above amendment, claim 1 has been amended. Claims 4-14 have been canceled without prejudice as being withdrawn from consideration as per the finality of the restriction requirement. New claims 15-17 have been added to further define the invention. No new matter has been introduced by virtue of the claim amendments. In addition, the new claims fall within the scope of the elected claims. Applicants respectfully request reconsideration of the claim rejections in view of the above amendments and the following remarks.

Claim Rejections- 35 U.S.C. § 103:

Claims 1, 2 and 3 stand rejected under 35 U.S.C. § 103 as being unpatentable over the Background of the invention (the “Background”) in view of U.S. Patent No. 6,576,950 to Cappelletti et al., for the reasons set forth on pages 3-5 of the Office Action. Applicants respectfully submit that claim 1 is patentable and non-obvious over the combination of Background and Cappelletti.

On page 4 of the Office Action, the Examiner acknowledges that the Background does not disclose that the edges of the tunnel oxide layer and buried N+ region are equidistant. However, Examiner relies on FIG. 14 of Cappelletti as disclosing this claimed feature, but offers not support with reference to specific text portions of Cappelletti's disclosure. It is respectfully submitted that Examiner's reliance on Cappelletti in this regard as curing the deficiencies of Background is misplaced.

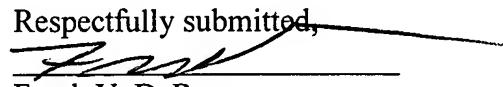
Indeed, the Background teaches a conventional manufacturing process (FIGs. 1-3) for forming a tunnel oxide layer (22) in a tunnel region (60) using two separate and different photolithography steps, which *can result in misalignment of the buried N+ region*, as depicted in FIG. 4 (see, e.g., Applicants' Specification, p. 3, lines 19-22).

Cappelletti discloses a process for forming the tunnel oxide layer (8) (as depicted in FIGs. 5B, 6B and 7B) (see, e.g., Col. 2, lines 27-46 and Col. 5, lines 1-13), which is the *same* as, or *substantially similar* to, the conventional process disclosed in the Background. In this regard, Cappelletti does not address issues regarding alignment of a tunnel oxide layer to a buried N+ layer, as in the claimed inventions. This is rather evident given that Cappelletti discloses the same process as in the Background, which can result in *misalignment of the buried N+ region and a tunnel region*. Therefore, it is respectfully submitted that there is no motivation for combining Cappelletti with Background in the manner suggested by the Examiner.

In any event, Cappelletti clearly does not disclose or suggest, e.g., *a tunnel region formed through the gate oxide layer, wherein the tunnel region is self-aligned to the buried N+ region*, much less *a tunnel oxide layer formed between sidewalls of the tunnel region on the buried N+ region, wherein distances between the edges of the tunnel oxide layer and the buried N+ region are equidistant as a result of the tunnel region being self-aligned to the buried N+ region*.

Accordingly, claim 1 is patentable and nonobvious over Background in view of Cappelletti. Moreover, claims 2-3 and 15-17 are patentable and non-obvious over Background and Cappelletti at least by virtue of their dependence from claim 1. Therefore, withdrawal of the obviousness rejections is respectfully requested.

Respectfully submitted,


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